



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,984	10/20/2005	Hideo Sato	273868US6PCT	1022
22850 7590 06/23/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER KING, JOHN B				
ART UNIT 2435		PAPER NUMBER		
NOTIFICATION DATE 06/23/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/553,984

Applicant(s)

SATO, HIDEO

Examiner

John B. King

Art Unit

2435

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-8 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-8 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to applicant's Request for Continued Examination filed on April 21, 2010.
2. Claims 1-3, 6-8, and 11-16 are pending in this application.
3. Applicant's arguments in respect to the new issues of Claims 1-3, 6-8, and 11-16 have been considered but they are not persuasive.

Response to Arguments

4. Applicant's amendments are accepted as overcoming the 35 U.S.C. 112 rejection of the previous Office Action dated February 22, 2010.
5. Applicant's arguments filed April 21, 2010 have been fully considered but they are not persuasive. In the remarks applicant argues:
 - I) The cited prior art does not teach "the second signal including image data of a diffusion plate located inside the imaging target".

In response to applicant's arguments:

- I) Applicant's arguments are considered moot based on the new grounds of rejection set forth below.

Examiner Notes

6. Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations

are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Objections

7. Claims 2 and 7 are objected to because of the following informalities: These claims recite using the hamming distance of **“the first signal”** as a seed to generate an encryption key. After further review of the Instant Application, paragraphs 35-51 specifically paragraphs 43-44, the examiner believes that this should be **“the second signal”**. Appropriate correction is required.

Double Patenting

8. Claim 11 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). In this case, the terms “configured to” and “means for” are merely verbal constructs that result in claim 11 being a substantial duplicate of claim 1 as both are device claims.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-3, 6-8, and 11-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bjorn (US Patent No. 6035398, published March 7, 2000) in view of Iihama (US Pre-Grant Publication 2002/0014530) and further in view of Rowe et al. (US Pre-Grant Publication 2002/0009213 A1, published January 24, 2002) hereinafter referred to as Rowe.

As per claims 1, 6, and 11, Bjorn discloses an encryption device for encrypting information on a unique confidential target, comprising: an imaging unit configured to perform imaging on a target and to output analog signal (**Bjorn, col. 3 lines 25-35, teaches extracting a fingerprint from a user and sent to the temporary storage unit.**); an identification unit configured to perform analog/digital conversion on the first signal having the image data to create identification information (**Bjorn, col. 3 lines 25-35, teaches extracting certain features from the fingerprint and storing this information in a temporary storage unit. If all of these actions are occurring, the analog signal has to be converted to a digital signal.**); a creation unit configured to perform analog/digital conversion on the second signal having the variation patterns

unique to the imaging unit by performing an algorithm on the second signal to create encryption key information (**Bjorn, col. 3 lines 25-60, teaches using a hash of the fingerprint data to generate a key. Also, the analog to digital conversion is inherent in this case because the signal has to be converted before use.**); and an encryption unit configured to encrypt the identification information by using the encryption key information (**Bjorn, col. 4 lines 4-20, teaches that the user's biometric data, fingerprint, can be encrypted. If the data is encrypted it must be encrypted using an encryption key.**)

However, Bjorn does not specifically teach outputting a variation patterns signal that is specific to the imaging unit or using these variation patterns to generate an encryption key. Bjorn also does not specifically teach the imaging unit imaging an inside portion of a target.

Iihama discloses outputting said second signal including image data of a diffusion plate located inside the imaging unit to create variation patterns unique to the imaging unit (**Iihama, paragraph 74 and Figure 1, teaches taking a picture of a user's fingerprint by using a diffusion plate i.e. the device takes an image of the fingerprint and the diffusion plate as the light goes through both before being stored as an image. The images are unique to the imaging unit because all units are not identical and may have slight differences that could lead to a slightly different imaging result.**)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the arts of Bjorn and Iihama because this would allow

the biometric authentication of Bjorn's device to be used in conjunction with lihama's diffusion plate system to allow the diffusion plate to be used in the image capturing process to insert more randomness into the image and key generation. The diffusion plate is a well-known device that is used in camera's to produce a more distorted/blurred (random) image.

However, Bjorn in view of lihama does not teach using the variation patterns to generate an encryption key.

Although, Bjorn does teach using a hash of the user's fingerprint to generate a key. This is using one signal to generate a key instead of using a different signal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use one signal instead of another to generate the encryption key.

However, Bjorn in view of lihama also does not teach the biometric data that is used being from an inside portion of a target.

Rowe discloses said first signal including image data of the inside portion of the unique confidential target **(Rowe, paragraph 8, teaches that blood vessel patterns can be used as biometric information.)**

Bjorn and Rowe are analogous art because they are from the same field of endeavor of using biometric data for user authentication.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use one form of biometric data, such as blood vessel patterns, instead of using another form of biometric data, such as fingerprints.

As per claims 2 and 7, Bjorn in view of lihama and further in view of Rowe discloses a storage unit configured to store a plurality of predetermined evaluation patterns having different hamming distances, wherein the creation unit uses the plurality of predetermined evaluation patterns and at least one hamming distance of the image data of the first signal as a seed to create the encryption key information (**Bjorn, col. 4 lines 4-37, teaches storing fingerprint templates in a memory. These templates are later hashed and used to generate a key.**)

Although Bjorn in view of lihama and further in view of Rowe does not specifically teach the use of hamming distance to generate the key it would have been obvious to one of ordinary skill in the art at the time the invention was made. Calculating the hamming distance between two sets of bits is well known in the art as well as generating a key from a number, such as a random number or seed. The hamming distance is just a number and a hash is also just a number. Unless there is a specific reason to use the hamming distance it would have been obvious to use a random number or anything else such as a hash to generate the key.

As per claims 3 and 8, Bjorn in view of lihama and further in view of Rowe discloses The encryption device according the claim 2 **[See rejection to claim 2 above]**, further comprising: a communication unit configured to communicate with a prescribed communication party; and the creation unit is further configured to select evaluation patterns requested by the communication party, from the plurality of predetermined evaluation patterns stored in the storage unit (**Bjorn, col. 8 lines 30-40,**

teaches communicating with a certification authority in order to transfer a fingerprint template for user authorization.)

As per claim 12, Bjorn in view of lihama and further in view of Rowe discloses The encryption device according to claim 1 **[See rejection to claim 1 above]**, wherein the imaging unit is further configured to project near-infrared light into the target **(Rowe, paragraph 8, teaches using near-infrared light, to image blood vessels in a targets hand.)**

As per claim 13, Bjorn in view of lihama and further in view of Rowe discloses The encryption device according to claim 1 **[See rejection to claim 1 above]**, wherein the first signal includes blood vessel pattern information representing a formation pattern of blood vessel tissues inside the target **(Rowe, paragraph 8, teaches using near-infrared light, to image blood vessels in a targets hand.)**

As per claim 14, Bjorn in view of lihama and further in view of Rowe discloses The encryption device according to claim 1 **[See rejection to claim 1 above]**, wherein the second signal includes data based on a signal output from a plurality of piezoelectric elements of a touch pad **(lihama, paragraph 74, teaches using an image reading apparatus to capture an image of a user's fingerprint. It would have been an obvious design choice to use different elements to capture the imaging data.)**

As per claim 15, Bjorn in view of Iihama and further in view of Rowe discloses The encryption device according to claim 1 **[See rejection to claim 1 above]**, wherein the second signal includes data based on a signal output from a group of active elements **(Iihama, paragraph 74, teaches using an image reading apparatus to capture an image of a user's fingerprint. It would have been an obvious design choice to use different elements to capture the imaging data.)**

As per claim 16, Bjorn in view of Iihama and further in view of Rowe discloses The encryption device according to claim 1 **[See rejection to claim 1 above]**, wherein the second signal includes data based on a signal output from a group of passive elements **(Iihama, paragraph 74, teaches using an image reading apparatus to capture an image of a user's fingerprint. It would have been an obvious design choice to use different elements to capture the imaging data.)**

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. King whose telephone number is (571) 270-7310. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John B King/
Examiner, Art Unit 2435
/Kimyen Vu/
Supervisory Patent Examiner, Art Unit 2435